



# GILSONITE

## CEMENTING SERVICE BULLETIN

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### GILSONITE

### TECHNICAL DATA

**GILSONITE** serves several purposes as a cementing additive. While it is primarily used as a lost circulation additive. It also extends the slurry yield. It also serves as a scouring agent in fluids, such as scavenger slurries, or chemical washes, helping to remove excessive mud cake from the formation.

Lighter density slurries are provided when gilsonite is used because of the low specific gravity of the agent and because extra water is required when it is used.

### PROPERTIES

<u>PETROCHEM</u> <u>MATERIAL</u>	<u>FORM</u>	<u>SP.GR.</u>	<u>ABSOLUTE</u> <u>VOLUME</u>
GILSONITE	Black Angular Solid	1.07	0.1123

### SAFETY

Eyes: Wash the eyes with water for 15 minutes. If irritation persists, get medical attention.

Skin: Normal cleanliness will prevent skin irritation.

Inhalation: No systematic injury expected, but avoid breathing the dust.

## **LOST CIRCULATION**

The primary use for Gilsonite is in restoring lost circulation due to the bridging action of the angular Gilsonite solids at the point of lost returns. Its effectiveness is due to the particle-size distribution. The larger and medium-size particles bridge forming a network which retains the finer particles. Thus, a dense deposit is formed which is sealed by the cement. Decreasing the slurry weight by using an extender helps in controlling lost circulation by reducing the hydrostatic pressure.

## **USE AS AN EXTENDER**

Gilsonite can be used to lighten the slurry and increase the slurry yield but will still provide a relatively high-strength set cement. Large amounts of water are not required for Gilsonite. The reduction of slurry density is primarily the result of the low specific gravity of the gilsonite.

## **MIX WATER REQUIREMENTS**

One extra gallon of water is normally used for each 25 lb of Gilsonite. Normally P-EBA is required to prevent gravitational separation of a material having such a wide variance in density from the slurry. Because such a small amount of Gilsonite is required, it can be blended into the slurry without the use of P-EBA.

## **SOLUBILITY**

Gilsonite, being a hydrocarbon, is somewhat soluble in hydrocarbon solvents. It is more soluble in kerosene and naphtha than it is in crude oil. The effect of crude oil on set cement containing gilsonite is negligible beyond the dissolution of exposed Gilsonite particles.

Gilsonite has a melting point of 385°F. Some softening occurs above 240°F and particles may tend to fuse together. Because of the temperature reduction during circulation, Gilsonite can be used in wells having a static bottom-hole temperature of 300°F and slightly higher.

## **THICKENING TIME**

Gilsonite is an inert solid and, owing to the small amount of additional water required, does not appreciably change the thickening time of the slurry.

## **COMPRESSIVE STRENGTH**

Higher compressive strength is generally attainable when solid particles are added to a slurry without adding excessive quantities of water. Laboratory tests indicated the cements containing either gilsonite or ground coal extender have higher strengths at all ages than most other available lightweight or lost-circulation slurries at the same slurry weight, although the strength is less than that of the same neat cement systems without the Gilsonite.